CLAIM LISTING

1. (currently amended)   An apparatus for data transmission within a spread-spectrum communication system, the apparatus comprising:

a long-code scrambler having data symbols as an input and outputting the data symbols scrambled with a long code; and

a modulator having the scrambled data symbols as an input and outputting modulated scrambled data symbols, ~~wherein the modulator maps the scrambled data symbols to a constellation and wherein the modulator is a quadrature amplitude modulator~~ wherein the long-code scrambler comprises:

a long code generator outputting a long code;

a decimator having the long code as an input and outputting a decimated long code; and

a permuter having the decimated long code as an input and outputting a plurality of permuted, decimated long codes.

2. (canceled)

3. (canceled)

4. (canceled)

5. (currently amended)   An apparatus for reception of transmitted signals within a spread-spectrum communication system, the apparatus comprising:

a demodulator having a transmitted signal as an input and outputting a demodulated signal, ~~wherein the demodulator is a quadrature amplitude demodulator~~; and

a long-code despreader having the demodulated signal as an input and outputting despread data, wherein the long-code descrambler comprises:

a long code generator outputting a long code;

a decimator having the long code as an input and outputting a decimated long code; and

a permuter having the decimated long code as an input and outputting a plurality of permuted, decimated long codes.

6. (canceled)

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7. (canceled)

8. (currently amended)   A method for data transmission, the method comprising the steps of:

    receiving symbols by a long-code scrambler;

    long-code scrambling the received symbols to produced scrambled symbols; ~~and~~

    modulating the scrambled symbols~~, wherein the step of modulating the scrambled symbols comprises the steps of mapping the symbols to a constellation and quadrature amplitude modulating the scrambled symbols~~, wherein long-code scrambling comprises:

        generating a long code;

        generating a decimated long code using the long code; and

        permuting the decimated long code to produce the scrambled symbols.

9. (canceled)

10. (canceled)

11. (currently amended) A method for data reception comprising the steps of:

    receiving a transmitted signal and demodulating the transmitted signal to produce a demodulated signal~~, wherein the step of receiving and demodulating the transmitted signal comprises the step of receiving and quadrature amplitude demodulating the received signal~~;

    long-code descrambling the demodulated signal, wherein long-code descrambling comprises:

        generating a long code;

        generating a decimated long code using the long code; and

        permuting the decimated long code to produce a plurality of permuted, decimated long codes.

12. (canceled)

13. (original) An apparatus comprising:

    a long code generator outputting a long code;

    a decimator having the long code as an input and outputting a decimated long code; and

    a permuter having the decimated long code as an input and outputting a plurality of permuted, decimated long codes.

14. (original) The apparatus of claim 13 further comprising:

a plurality of scramblers having the plurality of permuted long codes as an input and outputting a plurality of scrambled data streams.

15. (original) The apparatus of claim 14 further comprising:

a plurality of quadrature amplitude modulators, each having a scrambled data stream as an input and outputting a modulated data stream.

16. (new) The apparatus of claim 1 wherein the modulator maps the scrambled data symbols to a constellation.

17. (new) The apparatus of claim 16 wherein the modulator is a quadrature amplitude modulator.

18. (new) The apparatus of claim 5 wherein the demodulator is a quadrature amplitude demodulator.

19. (new) The method of claim 8 wherein the step of modulating the scrambled symbols comprises the step of mapping the symbols to a constellation.

20. (new) The method of claim 19 wherein the step of modulating the scrambled symbols comprises the step of quadrature amplitude modulating the scrambled symbols.

21. (new) The method of claim 11 wherein the step of receiving and demodulating the transmitted signal comprises the step of receiving and quadrature amplitude demodulating the received signal.

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